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## Internet communication and transformation of university information space

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### Abstract

The higher education in Russia is nowadays on way of change. These changes are based on Western approach which includes the process of information space development. Access to information that requires information disclosure, clarity and accuracy is one of the conditions of integration in international higher education market. The need of sufficient volume of open information is discussed by university and academic community. This openness is a component of university competitiveness and one of the criteria of global ranking. Development of information and communication technologies and Internet allows the university top management to change radically the information space of the higher education. These changes include the revision of the basis of information organization in higher school, and stimulate the increase of information openness in education process. The realization of this principle allows to satisfy the main target audiences (parents, employers, students, and teachers) and to optimize the mechanisms of the state and public control of education system. The authors determine the ways of information space development of higher educational institution and offer the overview of efforts of TPU in this sphere.

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### 1. Introduction

The beginning of the 21th century was marked by development of information and communication technologies and Internet. This process is usually regarded as a condition of an intensification of international communication and exchanges of goods, services, information, and capital. The new information and communication technologies (Web 2.0 technologies) present a prospective channel for marketing and even direct distribution of certain goods and information services (Ivanauskas G.). They open also opportunities for building new forms of relationship between marketers and their customers in which users begin to generate and to control

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communication. Web 2.0 encompasses a heterogeneity of applications including social networking sites, wikis, blogs, podcasts, instant messaging, discussion forums, audio and video conferencing, group diaries and address books, hosted virtual offices, collaborative whiteboards and presentation systems (Barnes D., Clear F., Dyerson R., Harindranath G., Harris L. and Rae Alan, 2011).

## 2. Development of communication and internet technologies

Peters (1998) suggests four main changes in communication model compare the new and old media:

- Communication style - tend to have little or no time lag between the giving, receiving and responding aspects of communication between the parties.
- Social presence - or perceived personalness, the feeling that communication exchanges are sociable, warm, personal, sensitive and active.
- Control of contact
- Content – the content can be customized either by users or by senders. Where users are able to control the content, or presentation, of the message it is said to be interactive (cited by Ivanauskas G.).

Giedrius Ivanauskas notices that the interactivity gains a new meaning when it is applied through Web 2.0 platforms and Social media channels as dialogue between consumer and company becomes much more active and interactive. Most of the marketing academics recognized the importance of using such marketing channels as social media that take the meaning of interactivity to another level. G. Ivanauskas underlines that the main difference is that the companies instead of pushing the content through online channels empower people to engage and interact with other people and produce new content about the company (blogging, commenting, social networking and etc.) (Ivanauskas G.). This interactivity can facilitate a high degree of 'communication, cooperation, collaboration and connection' between users and between consumer and company.

The university top management stats also to understand the importance of online presence for higher education institutions. The higher education became the focus of intense policy around the world as it is considered as the main, leading factor of social and economic progress. The universities have recently started adapting to a global market and online marketing is becoming a new and effective tool for higher education. Higher competition and changing social environment are two important aspects that forced higher education institutions both public and private, to become more proactive and more market-oriented (Alexa E. L., Alexa M. & Stoica C. M., 2012). From the other hand most students can find everything online: not just what a university claims to be, but what it really is. The students can contact each other and they are becoming more active in finding information. The universities should be closer to their target audience by using new media channels such as Social Media and other Web 2.0 technologies.

## 3. The higher education and the modern challenges

The modern university had two models in its source: J. Henry Newman and W. von Humboldt. J. G. Newman believed that the university is liberal by its nature because it is the center of intellectual culture which is born thanks to free communication between representatives of various scientific areas. This university model supposed that the knowledge is the main objective whereas applied knowledge isn't the objective of university education (model of the higher education as universal education).

However intensively developing industrial society needed professionals of other types. University reform of Humboldt became the answer to this situation. This model was based on principle of unity of training and scientific researches. There were in practice important differences between the two models, but the emphasis of both was on the fundamental role of the university in the:

- Intellectual and moral development of elite.
- Unification of teaching, research and scholarship.

- International exchange of scholarship and learning (Morgan W. John , 2009, P. 96)

Universities, being extremely inert systems, carried out the mission during the centuries, and were still capable to adapt for challenges, making the minimum changes to the organizational processes and structures. The modern challenges such as globalization process, international market relations, development of information and communication technologies, lead to reconsider an university mission (as well as system of higher education in general) taking into account economic, political and social features of the beginning of the XXI century.

Education, as well as other social spheres, belongs to service sector. It makes and extends such noncommercial products as knowledge, ideology, and cultural experience. Social sectors, existing in the market conditions, can't be excluded from market processes. Their organization is subordinated to economic laws even if they do not conduct commercial activity. Educational establishments have kept and try to improve the infrastructure, they have stable demand for provided services and this demand has a differentiated character. The stakeholder of education system, first of all, is the state which regulates the state social order for these services through domestic policy. The other group of stakeholders is enterprises-employers which consider the higher education system as a source and a tool of personnel development. But the main group, certainly, is individual consumers: prospective and nowadays students and their parents.

The social importance of an education system causes the existence of two mechanisms of its regulation. On the one hand is a state regulation. On the other hand, it is mechanisms of market self-organization, connected with the competition of educational institutions in the regional, national and global markets. The state support of educational system is combined today with market approach to its organization and development. It demands from universities to search new ways of increasing the recognition of their offers in the educational market. There are various global academic rankings that are regarded as one of such indicators. "By ranking higher education, they provide a framework through which national/supra-national and institutional ambition and competitiveness can be measured as the number of knowledge-producing capacity and talent-catching Higher Education Institutions (HEIs) in the top 20, 50 or 100 " (Hazelkorn E., 2009). Despite the existing criticism (methodological problems of drawing up, short life cycle, etc.), global rankings make important impact on the relation of different groups of stakeholders, both to the higher education, as well as to the concrete universities.

#### **4. Global rankings and development of university information space**

National ratings exist in more than 40 countries and have the exceeding range of indicators (in relation to global ratings) owing to access for their authors to more extensive data. In spite of the fact that national rankings give more adequate assessment to activity of a higher educational institution, global rankings became the main reference point. University participation in these rankings allows to draw attention of the world scientific community, state, potential students, including foreign, and also leading experts, including foreign experts, interested in teaching activity, etc.

Among the recognized rankings one can name such rankings as ARWU, Times QS and THE World University Rankings, Webometrics (Webometrics Ranking of World Universities) which represents the global indicator of research activity of higher education institutions on the Internet. Thanks to participation in Webometrics, a university may become more open for the global scientific community, provides the visibility of the site and the quality of scientific activity of higher education institution, increases the motivation of its researchers. The national research Tomsk polytechnic university seeks to become the leading scientific and educational center. Webometrics became one of indicators to achieve this goal.

The current composite indicator is now built as follows (Ranking Web of Universities):

- Visibility (50%)

Impact. The quality of the contents is evaluated through a "virtual referendum", counting all the external links that the University web domain receives from third parties.

- Activity (50%)

Presence (1/3). The total number of webpages hosted in the main web domain (including all the subdomains and directories) of the university as indexed by the largest commercial search engine (Google).

Openness (1/3). The global effort to set up institutional research repositories is explicitly recognized in this indicator that takes into account the number of rich files (pdf, doc, docx, ppt) published in dedicated websites according to the academic search engine Google Scholar.

Excellence (1/3). The academic papers published in high impact international journals are playing a very important role in the ranking of Universities.

Being guided on these indicators TPU takes attention to information space development. Information space is a set of information resources and infrastructures. The main components of information space are: information resources, means of information exchange, information infrastructure. New tendencies in higher education influence on information space development of higher education institution. Now information space includes all aspects of university life, starting with an admission campaign and finishing with scientific researches. Development of information space of higher education institution is impossible without advanced technological structure. All internal information resources of higher education institution united in a uniform information system provide reliable, high-speed interaction between educational, scientific and administrative divisions, and also an access to inside university Internet network and to the global Internet.

Development of information space of higher education institution includes two ways: information management and efforts on increasing internet presence.

Harmonious work of elements of a common information space of higher education institution is impossible without administrative and organizational management which includes divisions of various levels. Administrative and organizational management provides functioning of information space, management procedure, information and the automated control systems.

The first tool of university online marketing is a website. The presentation website is a vital communication instrument for a higher education institution, because it is designed to offer a vast amount of information which can be easily brought to day. At the same time, the cost of dissemination is clearly lower than the one imposed by printed materials and it can be distributed virtually to an unlimited number of persons. The interactive features of the website allow students to have a glimpse not only to the academic program, but also to the location, facilities and resources of the university, as the site can have pictures, movies, virtual tours of the institution and information about the academic staff (Alexa E. L., Alexa M. & Stoica C. M., 2012).

The second tool of university online marketing is SEO (search-engine optimization). That is the art of ranking a website at the top of the returns for a Google or Yahoo search.

The third tool of university online marketing is SMM (Social Media Marketing). G. Ivanauskas gives some characteristics of Social Media according different authors. According to Mayfield (2008) social media is best understood as a group of new kinds of online media, which share most or all of the following characteristics: participation and engagement: social media encourages contributions and feedback from everyone who is interested. It blurs the line between media and audience; openness: most social media services are open to feedback and participation. They encourage voting, comments and the sharing of information. There are rarely any barriers to accessing and making use of content – password-protected content is frowned on; conversation: whereas traditional media is about „broadcast" (content transmitted or distributed to an audience) social media is better seen as a two-way conversation; community: social media allows communities to form quickly and communicate effectively. Communities share common interests, such as a love of photography, a political issue or a favorite TV show; connectedness: most kinds of social media thrive on their connectedness, making use of links to other sites, resources and people (Ivanauskas G.). Thus, SMM may be considered as one effective tools of developing the information space of university.

## **5. Dynamics of information space development in TPU**

Information space of TPU includes 7 000 personal computers and more than 200 zones WiFi in university buildings. All university work is presented in Internet space by means of corporative portal where teachers and students organize their interactive communication. The portal <http://portal.tpu.ru> has a sufficient content.

Since 2010 the Internet Communications Office which is responsible for developing the university information space was created in Tomsk polytechnic university. The main goal of this office is to form and to implement the concept of Internet presence of TPU for maintaining the its status as university of world level in Russian and international scientific and educational space. Since 2010 the university top management pays attention at development of university information space. The portal of TPU has raised and has maintained its positions on the following indicators: presence at a network, information openness, number of external links and many others.

Dynamics of information space development depends not only on a university ranking. One of the important indicators for developing the university information space is the communication policy which is realized by means of Internet advertising and public relations. The analysis of communication policy of TPU shows that the university uses the following instruments of Internet promotion. TPU is registered on different social networks: vk.com, facebook.com, linkedIn.com, ok.ru and many others. Permanent communication and interaction are the policy of TPU on social networks.

Every year universities carefully prepare for admission campaign in order to attract the best students. School students choose their future higher education institution by different criteria: existence of state-funded places, interesting profession, location, complexity of admission, access to information. The development of communication and information technologies leads to the fact that 90% of entrants take information about universities from Internet.

Thus, an active work with students and entrants is conducted on the social networks. This year admission campaign used two ways: the online-game "Enter TPU" and active work in group "I enter TPU". In social group "I enter TPU" all members may ask exciting questions, they quickly receive the answers from employees of TPU, students and entrants. Every day one can learn the news about university from social networks. During admission campaign the content is added by posts about admission, settling in a hostel, etc. During admission campaign a number of competitions were started in social group "I enter TPU": the best response, the most active user, amicable team and the game "I enter TPU" on web platform Postupai.tpu.ru. The game "I enter TPU" is synchronized with two federal Internet platforms: vk.com and facebook.com. When designing the game the developers used the brand book of TPU. The ideology of this game is "enter with class fellow" that was realized by means of special created special tools. One of the tools was the module "Your School" where all representatives from one school may communicate each others. The representatives from the winner school acquired the right to choose any room in TPU campus and to go to any conference of the world. The game attracted entrants from all over the world and made a contribution to the development of university information space.

## 6. Conclusion

In contemporary conditions the system of the higher education is characterized by high rate of globalization, increase of mobility of scientists and students, influence of information and communicative technologies that leads to changes of this system. The presence of higher education institution in the Internet becomes one of ways of promotion in global educational market. It allows university, on one hand, to show its concrete contribution to the world science development and on the other hand, to be presented in various global rankings. This goal is reflected in development programs of many research universities, in particular, Tomsk polytechnic university. Webometrics became one of priority for TPU, and being guided by its indicators, the top management of TPU creates and develops the information and communicative university environment.

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